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EXAMINER

HAWKINS GAY, JENNIFER M

ART UNIT

PAPER NUMBER

3672

DATE MAILED: 11/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/973,443

Applicant(s)

JOHNSON, CRAIG DAVID

Examiner

Jennifer H Gay

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 80-85. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because the abstract contains purported merits; such language is not allowed in the abstract. Correction is required. See MPEP § 608.01(b).

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

(1) if a machine or apparatus, its organization and operation;

Art Unit: 3672

- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4-10, 12-17, and 19-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Cornette et al. (US 5,392,850).

*Regarding claim 1:* Cornette et al. discloses a wellbore completion system that includes the following features:

- A plurality of gravel pack sections (18, 20, and 22) located within the well. It should be noted that the gravel pack sections would inherently impose a predetermined radial flow restriction upon the production fluid flowing through the gravel pack since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the flow rate through the section.
- One of the sections (22) creates a flow restriction different from the remaining sections (18 and 20).

*Regarding claim 2:* The sections are comprised of a gravel material with a permeability within a predetermined range. It should be noted that the gravel pack sections would inherently have a permeability within a predetermined range since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the permeability of the section.

*Regarding claim 4:* The system further includes a plurality of screens (34 and 36) that imposed a predetermined flow restriction on the production fluid. It should be noted that the operator would know the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore.

*Regarding claim 5:* The system further includes a plurality of screens (34 and 36) that imposed a predetermined flow restriction on the production fluid. It should be noted that the operator would know the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. It should be further noted that the flow restriction through a screen directly affects the pressure profile of the screen.

*Regarding claim 6:* In column 3, lines 1-6, Cornette et al. discloses that the screens used in the above system are of conventional types that are well known in the art. On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Cornette et al. could be any of the above types of screens.

*Regarding claim 7:* The system further includes a packer (30).

*Regarding claim 8:* The system further includes production tubing (42) in communication with the sand screen.

*Regarding claim 9:* It should be noted that the gravel pack sections would inherently have a predetermined range of flow conductivities since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the flow conductivity through the section.

*Regarding claim 10:* Cornette et al. discloses a system for completing a wellbore that includes the following features:

- A production tubing (42) that includes a plurality of screen section (34 and 36) that allow production fluid to flow into the tubing where the flow through screen 34 may be restricted by a plug (see col. 5, lines 15-20).
- Each of the sections has a flow restriction that imposes a predetermined flow restriction on the production fluid. It should be noted that the operator would

known the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. It should be further noted that the flow restriction through a screen directly affects the pressure profile of the screen.

- In column 3, lines 1-6, Cornett et al. discloses that the screens used in the above system are of conventional types that are well known in the art. On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Cornett et al. could be any of the above types of screens.

*Regarding claim 12:* The system further includes a gravel pack system that has a varying flow restriction along its length. As noted in column 2, lines 50-65, gravel layer 22 has a reduced permeability compared to layers 18 and 20 thus the gravel pack varies in flow restriction.

*Regarding claim 13:* Cornette et al. discloses a wellbore completion system that includes a gravel pack system that has a varying flow restriction along its length. As noted in column 2, lines 50-65, gravel layer 22 has a reduced permeability compared to layers 18 and 20 thus the gravel pack varies in flow restriction.

*Regarding claim 14:* The system further includes a plurality of screens (34 and 36) that imposed a predetermined flow restriction on the production fluid. It should be noted that the operator would known the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore.

*Regarding claim 15:* Cornette et al. discloses a wellbore completion system that includes a gravel pack system that has a varying flow restriction along its length. As noted in column 2, lines 50-65, gravel layer 22 has a reduced permeability compared to layers 18 and 20 thus the gravel pack varies in flow restriction and density.

*Regarding claims 16 and 17:* The system further includes a plurality of screens (34 and 36) that imposed a predetermined flow restriction on the production fluid. It should be noted that the operator would known the flow restriction through a wellbore screen prior to insertion into

Art Unit: 3672

the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. It should be further noted that the flow restriction through a screen directly affects the pressure profile of the screen.

*Regarding claim 19:* Cornette et al. discloses a method for completing a wellbore that involves the step of providing a completion system in the wellbore where the system includes a gravel pack (18, 20, and 22) where the gravel pack imposes a flow restriction on the production fluid flowing through the gravel pack.

*Regarding claim 20:* As noted in column 2, lines 50-65, gravel layer 22 has a reduced permeability compared to layers 18 and 20 thus the gravel pack varies in density.

*Regarding claim 21:* The system further includes a plurality of screens (34 and 36) that imposed a predetermined flow restriction on the production fluid. It should be noted that the operator would known the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore.

*Regarding claim 22:* In column 3, lines 1-6, Cornett et al. discloses that the screens used in the above system are of conventional types that are well known in the art. On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Cornett et al. could be any of the above types of screens.

*Regarding claim 23:* Cornette et al. discloses a method for completing a wellbore that involves the step of providing a completion system in the wellbore where the system includes a gravel pack (18, 20, and 22) where the gravel pack imposes a flow restriction on the production fluid flowing through the gravel pack. As noted in column 2, lines 50-65, gravel layer 22 has a reduced permeability compared to layers 18 and 20 thus the gravel pack varies in flow restriction.

*Regarding claim 24:* The system further includes a plurality of screens (34 and 36) that imposed a predetermined flow restriction on the production fluid. It should be noted that the operator would known the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore.

*Regarding claim 25:* Cornette et al. discloses a method for completing a wellbore that involves the step of providing a plurality of sand screen sections in a wellbore where the screen defines an annulus between the screen and the wellbore. The screens impose a predetermined flow restriction on the production fluid. It should be noted that the operator would know the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. Further, in column 3, lines 1-6, Cornette et al. discloses that the screens used in the above system are of conventional types that are well known in the art. On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Cornette et al. could be any of the above types of screens.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 11, 18, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cornette et al. (US 5,392,850) in view of Bode et al. (US 2002/0157837).

*Regarding claim 3:* Cornette et al. discloses all of the limitations of the above claims except for the gravel pack section imposing a greater pressure drop at the heel of a horizontal wellbore and progressively less of a pressure drop at the toe end of the wellbore. In paragraph 0008, Bode et al. teaches a horizontal wellbore where a well screen imposes a higher flow rate, i.e. a higher pressure drop, at the heel of the wellbore than at the toe. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the gravel pack section of Cornette et al. so that it imposed a greater pressure drop at the heel of a horizontal wellbore and progressively less of a pressure drop at the toe end of the



wellbore as taught by Bode et al. in order to have caused formation fluid located in zones closer to the toe of the wellbore to migrate toward the heel for easier production.

*Regarding claims 11 and 18:* Cornette et al. discloses all of the limitations of the above claims except for the system being located in a horizontal wellbore. In paragraphs 0006, 0062, and 0063, Bode et al. teaches a gravel packing system that is located in a horizontal wellbore. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used the system of Cornette et al. in a horizontal wellbore as taught by Bode et al. in order to have prevented the collapse of the horizontal wellbore (see paragraph 0006).

*Regarding claim 26:* Cornette et al. discloses a method for completing a wellbore that involves the step of providing a completion system in the wellbore where the system includes a sand screen (34 and 36) and a gravel pack (18, 20, and 22).

Cornett et al. discloses all of the limitations of the above claims except for developing a simulation model for designing the above system so that the system creates the desired flow restriction to provide substantially equal drainage along the length of the well. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have developed a simulation model to design the above system in order to have ensured that the designed system would provided the desired affects prior to testing it in a wellbore thus reducing the cost of the operation. It would have been considered further obvious to one of ordinary skill in the art, at the time the invention was made, to have designed the system to provide substantially equal drainage along the length of the well in order to have prevented coning which is known in the art to be an undesirable occurrence as taught in paragraph 0008 of Bode et al.

*Regarding claims 27 and 29:* The gravel pack of the above system has a varying density along the length of the wellbore. As noted in column 2, lines 50-65, gravel layer 22 has a reduced permeability compared to layers 18 and 20 thus the gravel pack varies in density.

*Regarding claims 28 and 29:* In column 3, lines 1-6, Cornette et al. discloses that the screens used in the above system are of conventional types that are well known in the art. On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Cornett et al. could be any of the above types of screens.

Art Unit: 3672

**Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references made of record disclose various wellbore screens and gravel packing devices and methods.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Friday, 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

JHG:   
November 20, 2002

  
DAVID BAGNELL  
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